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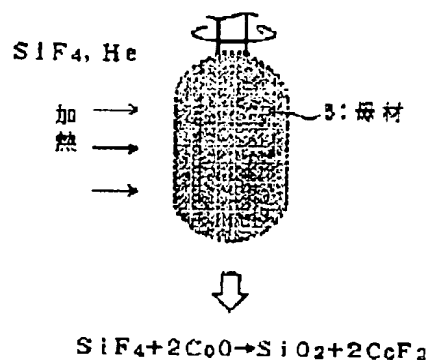
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APPLICANT : NIPPON TELEGR & TELEPH CORP
<NTT>;

INVENTOR : MUTA KENICHI;

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TITLE : PRODUCTION OF TRANSPARENT
GLASS MATERIAL FOR CO-DOPED
OPTICAL ATTENUATOR



ABSTRACT : PROBLEM TO BE SOLVED: To obtain highly transparent glass capable of preventing crystallization even when Co is doped in high concentration by heat-treating a preform made of quartz-based porous glass to which CoO is added under He atmosphere containing SiF₄ and vitrifying the preform.

SOLUTION: A graded index type soot-like preform is produced on a quartz rod, e.g. by flame hydrolysis method and the preform is temporally sintered so as to become a specified bulk density by heating the preform by an electric oven. The preform is immersed in a methanol solution of CoCl₂·6H₂O and allowed to stand. Then, the preform is taken out and naturally dried. The treated preform is heat-treated in an atmosphere in which Cl₂ and He gas is made to flow. Then, further, the preform 5 is retained in the electric oven while rotating the preform 5 in the arrow direction and heated while making SiF₄ and He gas to flow to the electric oven. Thereby, a reaction represented by the figure is carried out and CoO is decreased and converted to CoF₂ to almost prevent crystallization of glass and further, the preform is heat-treated to vitrify the preform.

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